PATENT SPECIFICATION

598,834

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PROVISIONAL SPECIFICATION

Improvements in or relating to Wood-Screws and the like

I, EDWARD CHAMBERLAIN THOMPSON, Lt. Col. (Royal Corps of Signals), of 6, Malmains Way, Beckenham, Kent, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to screws such as are used for screwing into wood and like relatively soft materials and are usually referred to as " wood screws ".

In many instances, it is necessary or desirable to secure elements or parts together by wood screws in such a manner that the screws will permanently secure the said elements or parts together and will not become loose or slackened as the result of vibration, wear and tear or from other causes and the chief object of the present invention is to provide a simple, convenient and efficient form of wood screw which will satisfy these needs.

In accordance with the invention the surface of the shank or plain portion of the screw between the head and the threaded portion is formed with a plurality of grooves which extend longitudinally of the screw and are shaped or formed transversely so as to oppose a withdrawal or slacking-back of the screw when it is in its operative position.

For the purpose in view, some three or four longitudinally extending grooves are preferably provided and, in the preferred form of the invention, the said grooves are shaped or formed so that the cross section of the shank resembles that of a reamer or ratchet wheel. That is to say, the grooves taper transversely and are such as to permit the screw to be screwed home in the normal manner but are adapted to resist turning movement in the opposite direction.

Thus, in carrying the invention into effect according to one convenient mode, the aforesaid shank may be provided with a plurality of, e.g. three or four, longitudinal surface grooves shaped to provide the screw with a plurality of reamer-like teeth which will not oppose the normal screwing-in of the screw but which, when the screw has been tightened and the fibres of the wood or the like have swollen or returned to their binding positions, will become locked or held firmly in position so that the screw is no longer withdrawable in the usual manner by rotation in the opposite direction.

Dated this 20th day of September, 1945.

ARTHUR W. PARFITT,
Chartered Patent Agent,
Stafford House, Norfolk Street, Strand,
London, W.C.2.

COMPLETE SPECIFICATION

Improvements in or relating to Wood-Screws and the like

I, EDWARD CHAMBERLAIN THOMPSON, Lt. Col. (Royal Corps of Signals), of 6, Malmains Way, Beckenham, Kent, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to screws such as are used for screwing into wood and like relatively soft materials and are usually referred to as " wood screws ".

In many instances, it is necessary or desirable to secure elements or parts together and will not become loose or slackened as the result of vibration, wear and tear or from other causes and the chief object of the present invention is to provide a simple, convenient and efficient form of wood screw which will satisfy these needs.

In accordance with the invention the surface of the shank or plain portion of the screw between the head and the

[Price 1/-]

threaded portion is formed with a plurality of grooves which extend longitudinally of the screw and are shaped or formed transversely so as to oppose a withdrawal or slacking-back of the screw when it is in its operative position.

For the purpose in view, some three or four longitudinally extending grooves are preferably provided and, in the preferred form of the invention, the said grooves are shaped or formed so that the cross section of the shank resembles that of a reamer or ratchet wheel. That is to say, the grooves taper transversely and are such as to permit the screw to be screwed home in the normal manner but are adapted to resist turning movement in the opposite direction.

Thus, in carrying the invention into effect according to one convenient mode, the aforesaid shank may be provided with a plurality of, e.g. three or four, longitudinal surface grooves shaped to provide the screw with a plurality of reamer-like teeth which will not oppose the normal screwing-in of the screw but which, when the screw has been tightened and the fibres of the wood or the like have swollen or returned t otheir binding positions, will become locked or held firmly in position so that the screw is no longer withdrawable in the usual manner by rotation in the opposite direction.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be more fully described with reference to the accompanying drawings which illustrate examples of screws made in accordance with it. In these drawings:—

Fig. 1 is a side view of one form of screw incorporating the invention; and

Figs. 2, 3 and 4 show transverse sections of three different forms of screws that may be used, the sections being taken on the line II—II of Fig. 1.

In the examples illustrated, the peripheral surface of the shank portion *a* of the screw is provided with four equally-spaced longitudinally-extending grooves *b*. The grooves are bounded by two walls which meet at an angle. One wall *d* lies in, or approximately in, a radial plane. The other *c* lies in a chordal plane. The other *c* lies in a chordal plane. The wall *d* is not so deep as wall *c* so that each is unsymmetrical about its longitudinal axis. The transverse section of the shank portion thus has some resemblance to that of a reamer, as illustrated in Figs. 2, 3 and 4. However the screw according to the invention is not designed to cut, as a reamer is, nor indeed to offer any extra resistance to the screwing in movement.

In the form shown in Fig. 2, the walls *c* and *d* are disposed at right angles to one another.

In some instances the walls *c* and *d* may include between them an angle of less than 90° as is shown, for example, in Figs. 3 and 4, for which purpose the walls *d* are appropriately inclined to the radial plane. In the form illustrated in Fig. 3, the angle between the two walls is only slightly less than 90°; in the form of Fig. 4 it is about 75°. In each of these forms the teeth have an "undercut" shape which assists in resisting anti-clockwise (or screwing-out) motion of the screw.

The line of junction *e* between the long wall *c* and the surface of the shank is preferably slightly radiused as indicated

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A wood screw the shank of which is provided with two or more longitudinal grooves which are so shaped transversely as to oppose a withdrawal or slacking-back of the screw when it is in position in the wood or other material.

2. A wood screw according to claim 1 in which the grooves are so shaped as to form a number of teeth which have smooth or rounded leading edges and sharp trailing edges.

3. A wood screw according to claim 1 or claim 2 in which the grooves are so shaped as to form a number of undercut teeth.

4. A wood screw according to any preceding claim in which the grooves are so shaped that the cross-section of the shank resembles that of a reamer or ratchet wheel.

5. A wood screw substantially as hereinbefore described with reference to Fig. 1, Fig. 2, Fig. 3, or Fig. 4 of the accompanying drawings.

Dated this 29th day of January, 1946.

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FIG. 1.

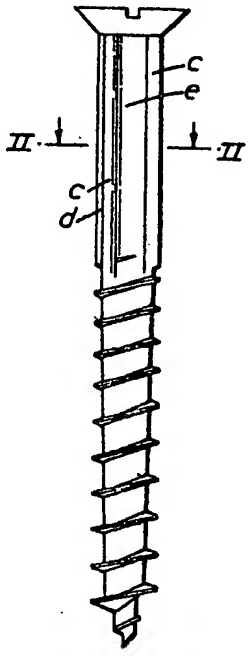


FIG. 2.

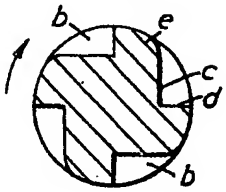


FIG. 3.

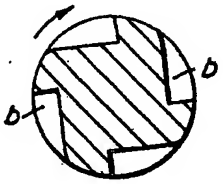
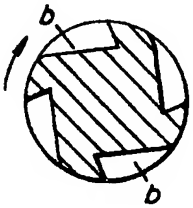


FIG. 4.



[This Drawing is a reproduction of the Original on a reduced scale.]

H.M.S.O.(Ty. P.)